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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/788,729	02/26/2004	Sumantra Chakravarty	030061	6099
23696 7590 07/03/2007 QUALCOMM INCORPORATED 5775 MOREHOUSE DR. SAN DIEGO, CA 92121			EXAMINER MURPHY, RHONDA L	
			ART UNIT 2616	PAPER NUMBER
			NOTIFICATION DATE 07/03/2007	DELIVERY MODE ELECTRONIC

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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# Office Action Summary

Application No.

10/788,729

Applicant(s)

CHAKRAVARTY ET AL.

Examiner

Rhonda Murphy

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-30 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 26 February 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

## Attachment(s)

- |  |  |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>7/29/05</u> . | 6) <input type="checkbox"/> Other: ____  |

## DETAILED ACTION

### ***Claim Rejections - 35 USC § 102***

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 5, 6, 18, 21 and 24 are rejected under 35 U.S.C. 102(e) as being anticipated by Tirkkonen et al. (US 2004/0132494 A1).

**Regarding claims 1 and 21**, Tirkkonen teaches a transmission method, comprising: encoding both first and second nominally orthogonal polarization signals (Fig. 2; channel 1 and channel 2) with a same long code (page 2, paragraph 27); and transmitting the long-encoded first and second nominally orthogonal polarization signals from respective first and second transmission sources (antenna 10 and antenna 12) to at least one destination (user equipment 18).

**Regarding claim 5**, Tirkkonen teaches the method of claim 1, wherein: the transmitting step is carried out in an orthogonal code division multiple access (OCDMA) communications system (page 5, paragraph 48).

**Regarding claims 6 and 24**, Tirkkonen teaches the method of claim 1, wherein the transmitting step includes: transmitting the long-encoded first and second nominally orthogonal polarization signals from plural first transmission sources and from plural

second transmission sources, respectively, to the at least one destination (Fig. 2; page 2, paragraph 27).

**Regarding claim 18**, Tirkkonen teaches a system configured to perform the method of claim 1 (Fig. 2).

### ***Claim Rejections - 35 USC § 103***

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 2 – 4, 9 – 11, 22, 23, 27 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tirkkonen et al. (US 2004/0132494 A1) in view of Yuan (US 2005/0243896 A1).

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**Regarding claims 2, 9, 22 and 27**, Tirkkonen teaches the method of claims 1, 8 and 21, further comprising: orthogonalizing plural sub-channels of each of the first and second nominally orthogonal polarization signals (page 3, paragraph 30; time slots).

Tirkkonen fails to explicitly disclose applying respective plural mutually distinct Walsh codes in each sub-channel.

However, Yuan discloses applying respective plural mutually distinct Walsh codes in each sub-channel (page 1, paragraph 10).

In view of this, it would have been obvious to one skilled in the art to modify Tirkkonen's method by applying Walsh codes to each channel, in order to spread the channels.

**Regarding claims 3, 10, 23 and 28**, the combined method of Tirkkonen and Yuan teach the method of claims 2, 9 and 22. Tirkkonen fails to explicitly disclose the method wherein the orthogonalizing step includes: applying different Walsh codes to different respective signals originating from different respective users of the communication system.

However, Yuan teaches applying different Walsh codes to different respective signals originating from different respective users of the communication system (page 1, paragraph 10).

In view of this, it would have been obvious to one skilled in the art to modify Tirkkonen's method by applying different Walsh codes to each channel, in order to spread the channels using a distinct set of codes.

**Regarding claims 4 and 11**, the combined method of Tirkkonen and Yuan teach the method of claim 3. Tirkkonen further teaches the transmitting step is carried out in an orthogonal code division multiple access (OCDMA) communications system (page 5, paragraph 48).

4. Claims 7, 8, 12 – 17, 19, 20, 25, 26, 29 and 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tirkkonen et al. (US 2004/0132494 A1).

**Regarding claims 7 and 25**, Tirkkonen teaches a communication method including the transmission method of claim 1. Tirkkonen fails to explicitly disclose: at the destination, receiving the encoded first and second nominally orthogonal polarization signals; and applying the same long code to the received encoded first and second nominally orthogonal polarization signals received at the destination.

However, Tirkkonen discloses transmitting the coded signals to a receiver, the receiver being aware of the codes it should receive and effectively carries out the process of retrieving the original signal (page 3, paragraph 28).

In view of this, it would have been obvious to one skilled in the art to perform the above process, in order to recover the signal originally transmitted.

**Regarding claims 8, 13, 26 and 29**, Tirkkonen teaches a method of modulating first and second nominally orthogonal polarization signals that were transmitted from respective first and second transmission sources (antenna 10 and antenna 12) after having been encoded with a same long code (page 2, paragraph 27), the method comprising: transmitting the encoded first and second nominally orthogonal polarization

signals (Fig. 2; channel 1 and channel 2); and applying the same long code to the transmitted encoded first and second nominally orthogonal polarization signals (page 2, paragraph 27); and receiving the encoded first and second nominally orthogonal polarization signals (page 3, paragraph 28).

Although Tirkkonen fails to explicitly disclose a method of demodulating first and second nominally orthogonal polarization signals that were transmitted, Tirkkonen discloses transmitting the coded signals to a receiver, the receiver being aware of the codes it should receive and effectively carries out the process of retrieving the original signal (page 3, paragraph 28).

In view of this, it would have been obvious to one skilled in the art to perform the process of demodulating the signals, in order to recover the signal originally transmitted.

**Regarding claim 12**, Tirkkonen teaches the method of claim 8, wherein: the receiving step is carried out in an orthogonal code division multiple access (OCDMA) communications system (page 5, paragraph 48).

**Regarding claim 14 and 30**, Tirkkonen teaches the method of claim 13, wherein the transmitting step includes: transmitting the long-encoded first and second nominally orthogonal polarization signals from plural first transmission sources and from plural second transmission sources, respectively, to the at least one destination (Fig. 2; page 2, paragraph 27).

**Regarding claims 15, 16 and 17**, Tirkkonen teaches the method of claims 1, 7 and 8, but fails to explicitly disclose a computer program product storing program instructions for execution on a computer system having at least one data processing device, whose

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instructions when executed by the computer system cause the computer system to perform the method of claim 7.

However, it is known in the art for a computer program having a data processing device to perform the above method.

Thus, it would have been obvious to one skilled in the art to include a computer program, in order to execute the instructions to implement the method.

**Regarding claim 19**, Tirkkonen teaches a system configured to perform the method of claim 7 (Fig. 2).

**Regarding claim 20**, Tirkkonen teaches a system configured to perform the method of claim 8 (Fig. 2).

### ***Conclusion***

1. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Jain et al. (US 2002/0181388 A1).
- Hwang et al. (US 2002/0115473 A1).
- Gans et al. (US 5,943,372)

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rhonda Murphy whose telephone number is (571) 272-3185. The examiner can normally be reached on Monday - Friday 9:00 - 5:30pm.



If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Huy Vu can be reached on (571) 272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Art Unit 2616

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